Editor's Note: "Meet MASTER - Modeling & Simulation Test & Evaluation Reform," which ran on p. 8 of our March-April 1999 issue of *Program Manager,* generated more reader response than any article we've ever published. Lack of space precludes printing them all; however, the letters shown here were typical.

Just finished reading your article in the Mar-Apr edition of the DSMC *Program Manager* Magazine and wanted to provide some feedback from the trenches. First, let me thank and congratulate you for writing an excellent article which accurately zeroes in on the foundational problems facing the M&S [Modeling & Simulation] communities. I work in the 53rd Wing, Eglin AFB, Fla., and currently supervise a group of test managers who are responsible for the T&E [Test & Evaluation] of aircrew training devices (a.k.a., flight simulators). As such, we are keenly aware of the lack of standardization, interoperability, and validation of models for use in training, T&E, and [SBA].

We have attempted a local "grass roots" effort to combine efforts of the acquisition community, the laboratory, and the test and training communities to propose a local repository of models which may be used across the spectrum. No small task. Our suggestion is that each of the major product centers establish a repository of models for their respective technical vectors.

For example, here at Eglin, a repository for [ownership] munition models would be established ... this office would not only maintain the models, but ensure that they were verified and validated. Wright-Patterson would maintain the aero models, SMC [Space and Missile Systems Center] space models, etc. The office here at the Air Armament Center is valiantly attempting this with no funding or manpower authorizations. I agree that PMs are not incentivized to fund the models out of their budget since there is no external advocacy forcing the issue.

As a former PM, I can empathize with the issues you state ... especially the lack of a quick return on investment. Perhaps requiring a basic model as part of an offeror's proposal would get the ball rolling "up front and early." In the not-too-distant future, an offeror's proposal should simply be a virtual prototype.

In the training arena, common models with the same level of fidelity are crucial as we head toward Distributed Mission Training in the Joint Synthetic Battlespace. We currently have limited capability to validate [ownership] models as well as threat models in order to accredit flight simulators for training, let alone the rigorous validation needed for Mission Rehearsal. The only agency which conducts threat model validation for simulators within the AF Information Warfare Center (AFIWC/SAMM) is slated for closure. Once they are gone, we have no capability. We are working through the AF Agency for Modeling and Simulation in Orlando and DMSO [Defense Modeling and Simulation Office] to ensure HLA [High Level Architecture] compliance, but that doesn't solve the issue of models. We don't need any more unfunded mandates ... if we're serious about initiatives like MASTER [Modeling & Simulation Test & Evaluation Reform], we need the top-down leadership, advocacy, and funding to make them a reality.

You state at the end of your article that you hope to precipitate meaningful and open discussion. This is sent in response. Thanks again for bringing this issue to the forefront. You can be assured that it struck a chord with those of us working hard to leverage this great technology!

Air Force Lt. Col. Keith Yockey
Eglin AFB, Fla.

I read your article in *PM* Magazine with great interest. Just wanted to say "right on!" I can recall ... that M&S issues were always like getting your teeth pulled. Now that I am working at PM Smoke and Obscurants I see the PM's frustration at the lack of smoke and obscurant effects represented in M&S. Hopefully you will have stimulated discussion and action with the article.

Maj. Mark O'Brien
PM, Smoke Obscurants, Edgewood Area
Aberdeen Proving Ground, Md.

I saw [the] "MASTER" article in the DSMC *Program Manager* magazine and thought it was very well done. It is very thoughtful, and asks good questions about who is going to pay for all this M&S work that needs to be done, which people have been glossing over for a long time now. I hope you get a lot of reaction from the article that will cause these questions to be addressed. Thanks for writing the article. It needed to be done. Nice job!

Dale Atkinson
Defense Consultant, IDA

I offer the following constructive suggestions concerning the MASTER proposal you put forth. Make DMSO a command organization. Give it the 2 to 3 percent funding and allow it to allocate 100 percent of these M&S "fenced" funds to the consortium to do necessary work. Clearly, this work would be to extend or evolve existing models in support of the integrated M&S fabric as defined and bounded by HLA/RTI [High Level Architecture/Run Time Infrastructure]. HLA/RTI itself would still be funded by a limited OSD R&D [Research & Development] line of accounting, separate and apart from the Consortium funds to assure it remains "overarching."

This slight modification to the MASTER concept offers several advantages not immediately evident in the proposal as pitched. Namely:

It makes HLA a far more legitimate standard and naturally extends it into actual practice. At the same time, the consortium, if allowed to do so, provides a valuable feedback forum to make the HLA and RTI more realistic in real-time environments. In essence, there is nothing better than the results of bottom-up, physics-based problem solving to make a standard "stick."

It provides a better mechanism for funds arbitration than via some advisory body such as the DSB [Defense Science Board]. This essential function will involve binding decisions that will govern livelihoods and should legitimately be a line management or "command" function. It can not work as a series of unenforceable recommendations by a set of paid, “super annuited” consultants.

It avoids the inevitable food fights among contending M&S feifdoms/Czars for the available funds, or at least introduces some modicum of control over the natural scrapping. It also assures better balance and helps prevent a handful of aggressive consortium players from creating counterproductive "empires" as is entirely possible in an unconstrained environment where funds are available.

It allows an orderly allocation of funds to further M&S in support of the PM structure. In this regard, the DMSO customer should be clearly defined as the cradle-to-grave acquisition management structure, not the laboratories and field activities. In turn, these acquisition support organizations should really serve as the arms and legs to make M&S happen on behalf of the PMs.

It provides a forum that better integrates the various and sundry Joint activities and the RCC [Range Commanders Council] to participate and, where appropriate, derive the benefit of some added funding as contributors to the consortium.

Most importantly, given an appropriate executive mindset, it provides sound governance of a phenomenon that could otherwise remain chaotic absent good fiscal and policy oversight. In essence, it is in keeping with effective [model management] yet allows the flexibility to leverage resources as required from the vast matrix of available talent to advance our knowledge and achieve a shared objective.

George Hurlburt
Naval Air Warfare Center
Patuxent River, Md.

Thanks for "thinking out of the box" on M&S. As a test engineer, currently working in multibody dynamics, I share all the views you expressed. Implementing your strategy should also have the beneficial effect of reducing the sizable duplication in M&S capabilities which now exists in the DoD.

Jim Faller
Army Research Laboratory